

CLAIMS

1. Yarns or fibres made of polymer, characterized in that the said polymer comprises an additive possessing flame-retardant properties composed of at least particles of a solid substrate on which a flame-retardant compound is adsorbed.
2. Yarns or fibres according to Claim 1, characterized in that the concentration by weight of flame-retardant additive is between 0.5% and 25%, with respect to the weight of polymer.
3. Yarns or fibres according to Claim 2, characterized in that the concentration by weight of flame-retardant additive is between 1% and 10%, with respect to the weight of polymer.
4. Yarns or fibres according to Claims 1 to 3, characterized in that the solid substrate is an inorganic substrate chosen from the group consisting of silica, alumina, zirconia, magnesium oxide, calcium oxide, cerium oxide, titanium oxide, or their mixtures, calcium silicate, magnesium silicate and alkaline aluminosilicates.
5. Yarns or fibres according to Claims 1 to 4, characterized in that the flame-retardant additive in the yarns or fibres is composed of particles or aggregates, at least 80% by number of which exhibit a size of less than 1 μm .
6. Yarns or fibres according to one of the preceding claims, characterized in that the solid substrate is in the form of porous granules or agglomerates, before being added to the polymer.
7. Yarns or fibres according to Claim 6, characterized in that the granules or agglomerates exhibit a pore volume of at least 0.5 ml/g.

8. Yarns or fibres according to Claim 6 or 7, characterized in that the granules or agglomerates have a mean diameter (D50) of greater than or equal to 60 μm .
9. Yarns or fibres according to one of the preceding claims, characterized in that the solid
5 substrate is a silica.
10. Yarns or fibres according to Claim 9, characterized in that the silica is in the form of granules or agglomerates exhibiting a specific surface of greater than 50 m^2/g
- 10 11. Yarns or fibres according to either of Claims 9 and 10, characterized in that the silica granules or agglomerates exhibit a pore volume of at least 0.5 ml/g , measured by the mercury porosity method.
12. Yarns or fibres according to one of the preceding claims, characterized in that the flame-
15 retardant compound is chosen from the group of the organophosphorus compounds, melamine and melamine derivatives.
13. Yarns or fibres according to Claim 12, characterized in that the organophosphorus compounds are chosen from polyphosphate esters, phosphoric esters or phosphonic
20 esters.
14. Yarns or fibres according to one of the preceding claims, characterized in that the polymer is chosen from the group of the thermoplastics consisting of polyolefins, polyesters, poly(alkylene oxide)s, polyoxyalkylenes, polyhaloalkylenes, poly(alkylene phthalate or
25 terephthalate)s, poly(vinyl acetate)s, poly(vinyl alcohol)s, poly(vinyl halide)s, poly(vinylidene halide)s, polyamides, polyimides, polycarbonates, polymers of acrylic or methacrylic acid, polyacrylates or polymethacrylates, or thermoplastic copolymers comprising at least one monomer identical to any one of the monomers included in the abovementioned polymers, and the copolymers and/or blends.

15. Yarns or fibres according to Claim 14, characterized in that the thermoplastic is chosen from polyesters, polyamides, polyacrylamide, polyacrylonitrile, poly(acrylic acid), ethylene-acrylic acid copolymers, ethylene-vinyl alcohol copolymers, and the polymers of the same family; polyolefins, such as low density poly(ethylene), poly(propylene), chlorinated low
5 density poly(ethylene) or poly(styrene).

16. Yarns or fibres according to Claim 14, characterized in that the thermoplastic is chosen from the group consisting of poly(ethylene terephthalate)s comprising at least 80% of ethylene terephthalate units and copolymers of ethylene terephthalate and of
10 5-isosulphonic acid.

17. Yarns or fibres according to Claim 14, characterized in that the thermoplastic is chosen from the group consisting of polyamide 6, polyamide 6,6, polyamide 4, polyamide 11, polyamide 12, polyamides 4,6, polyamide 6,10, polyamide 6,12, polyamide 6,36,
15 polyamide 12,12, their copolymers and blends.

18. Yarns or fibres according to one of the preceding claims, characterized in that they comprise additives chosen from the group consisting of pigments, dyes, heat and/or light stabilizers, hydrophilic agents, hydrophobic agents and mattifying agents.

19. Process for the manufacture of the yarns or fibres according to one of the preceding claims, characterized in that it consists in adding the additive possessing flame-retardant properties to the thermoplastic in the molten state, in spinning the said mixture through a spinneret and in applying a spinning or winding-up rate of greater than 300 m/min.

20. Process according to Claim 19, characterized in that the spinning rate is greater than 300 m/min.

21. Process according to Claims 19 and 20, characterized in that the flame-retardant additive
30 is obtained by impregnation of granules or agglomerates of an inorganic substrate with the flame-retardant compound in the liquid state or in solution.

22. Process according to Claim 19, characterized in that the concentration by weight of flame-retardant compound in the flame-retardant additive is between 20% and 70% by weight, with respect to the weight of inorganic substrate.

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23. Process according to Claim 22, characterized in that the concentration by weight of flame-retardant compound is between 20% and 50%.